EX27000 Series

IEC 61850-3/IEEE 1613 Managed 24-port 10/100BASE and 4-port Gigabit Ethernet Switch with SFP options

Overview

EtherWAN's EX27000 series provides an industrial-grade fully managed 28-port switching platform combining high performance switching backbone with robust and secure management features required for mission critical and industrial environments where sustained connectivity is crucial.

The EX27000 series is equipped with 24 fast Ethernet ports and 4 gigabit uplink ports with fixed fiber or SFP options. Industrial-grade allows for fan-less operation in high EMI and vibration environments with a temperature range from -10 to 60°C (14 to 140°F).

Users are able to access EX27000 management features such as port security, IGMP snooping, VLANs, GARP protocols, and LACP via web browser, Telnet, SNMP, RMON, TFTP, and RS-232 console interfaces.

EX27000 is also comply with IEC 61850-3 and IEEE 1613 certified for power substations and EN 50121-4 certified for railway applications, it can be mountable on a 1U rack, and is equipped with EtherWAN's Alpha-Ring self-healing technology, providing less than 15ms fault recovery time making it ideal for applications intolerant to interruption.

EtherWAN — "**When Connectivity is Crucial.**"

Spotlight

Certified for applications in electric power substations and railway managements

» Compliant with IEC 61850-3 & IEEE 1613, and EN 50121-4 standards

Redundant power inputs

» Supports AC Inlet and DC Terminal Block

SFP Options

» Supports a list of SFP modules, and the user can flexibly configure each port via SFP module management

Fan-less Metal Casing

» For easy maintenance with -10 to 60°C (14 to 140°F) wide operating temperature

Features

Management

» Interface

- CLI, Telnet and Web Browser
- SNMP v1/v2c/v3

» Firmware and configuration upgrade and backup via TFTP

» Supports DHCP Server/Client

» RMON (Remote Monitoring): group 1, 2, 3, 9

» Port mirroring: TX/RX and both

» NTP (Network Time Protocol) time synchronization

» IEEE 802.1ab LLDP (Link Layer Discovery Protocol)

» IPv4/IPv6

Security

» MAC Address by port security

» Enable/Disable port

» Storm control (Broadcast and multicast types)

» IEEE 802.1x LAN access control

» Remote authentication through RADIUS and TACAS+

» SSH for CLI and Telnet security

» SSL for web security

» ACL

» Multi-level user account/password against unauthorized configuration

Quality of Service (QoS)

» Priority Queues: 8 queues per port

» Traffic classification based on IEEE 802.1p CoS, DSCP, WRR (Weighted Round Robin) and strict mode

» Rate Limiting (Ingress/Egress)

Layer 2 Features

» Auto-negotiation for port speed and duplex mode

» Flow Control

- IEEE 802.3x full duplex mode

- Back-Pressure half duplex mode

» Redundant Protocol

- IEEE 802.1D Spanning Tree Protocol (STP)
- IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
- IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
- EtherWAN's Alpha-Ring network fault recovery (<15ms) and Alpha-Chain

» VLANs

- Port-based VLANs
- IEEE 802.1Q Tag VLANs (128 groups, 4096 VID)
- GVRP (GARP VLAN Registration Protocol)
- GMRP (GARP Multicast Registration Protocol)

» Link Aggregation

- Static Trunk (8 groups, support MAC base)
- IEEE 802.3ad Link Aggregation Control Protocol

» IGMP Snooping

- IGMP Snooping v1/v2/v3

Performance

» Switching Capability: 12.8Gbps

» Jumbo Frame: 9K bytes

Specifications

Technology

Standards

• IEEE 802.3 10BASE-T

• IEEE 802.3u 100BASE-TX/100BASE-FX

• IEEE 802.3ab 1000BASE-T

• IEEE 802.3z 1000BASE-SX/1000BASE-LX

• IEEE 802.3x Full duplex and flow control

• IEEE 802.1p QoS

• IEEE 802.1Q Tag VLANs

• IEEE 802.1w RSTP

• IEEE 802.1x Port-based Network Access Control

Forward and Filtering Rate

• 14,880pps for 10Mbps

• 148,810pps for 100Mbps

• 1,488,100pps for 1000Mbps

Packet Buffer Memory

• 12M bits

Processing Type

• Store-and-Forward

• Auto Negotiation

• Half-duplex back-pressure and IEEE 802.3x full-duplex flow control

• Auto MDI/MDIX

Address Table Size

• 16K MAC addresses

Power

Input

• (T): ±48VDC Internal Universal PSU

• (W): 88-300VDC or 100-240VAC Internal Universal PSU

• (C): 100-240VAC, 50-60Hz Internal Universal PSU

Power Consumption

• For models with all copper ports: EX27604 Series: 21.9W@230VAC

• For models with all fiber ports: EX27064 Series: 40.6W@230VAC

Mechanical

Casing

• Metal Case

• IP30

Dimensions

• Redundant Power:

442 x 375 x 44mm (W x D x H)

(17.4" x 14.7" x 1.73")

• Single Power:

442 x 284 x 44.2mm (W x D x H)

(17.4" x 11.1" x 1.74")

Weight

• 5Kg (11lbs)

Installation

• Rack mounting

Interface

Ethernet Port

• 10/100BASE-TX: 0, 8, 16 or 24 ports

• 100BASE-FX: 0, 8, 16 or 24 ports

• Gigabit: 4 ports

Console Port

• Port: One DB9 RS-232 port

Alarm Contact

• One relay output with current 0.6A/30VDC

LED Indicators

• Per Unit: Power, Alarm

• Per Port: Link/Activity (Green)

• Per SFP Port: Selected (Green)

Environment

Operating Temperature

• -10 to 60°C (14 to 140°F)

Tested @ -20 to 70°C (-4 to 158°F)

Storage Temperature

• -40 to 85°C (-40 to 185°F)

Ambient Relative Humidity

• 5% to 95% (non-condensing)

Regulatory Approvals

ISO

• Manufactured in an ISO 9001 facility

Safety

UL 62368

EMI

FCC Part 15B Class A

EN 61000-6-4

EMS

EN 61000-6-2

• EN 61000-4-2 (ESD Standards)

• EN 61000-4-3 (Radiated RFI Standards)

• EN 61000-4-4 (Burst Standards)

• EN 61000-4-5 (Surge Standards)

• EN 61000-4-6 (Induced RFI Standards)

• EN 61000-4-8 (Magnetic Field Standards)

• IEC 61000-4-10 (Oscillatory wave magnetic field test)

• IEC 61000-4-16 (Power frequency immunity test)

Environmental Test Compliance

FED STD 101C Method 5007.1 (Free fall w/package)

IEC 60068-2-6 Fc (Vibration Resistance)

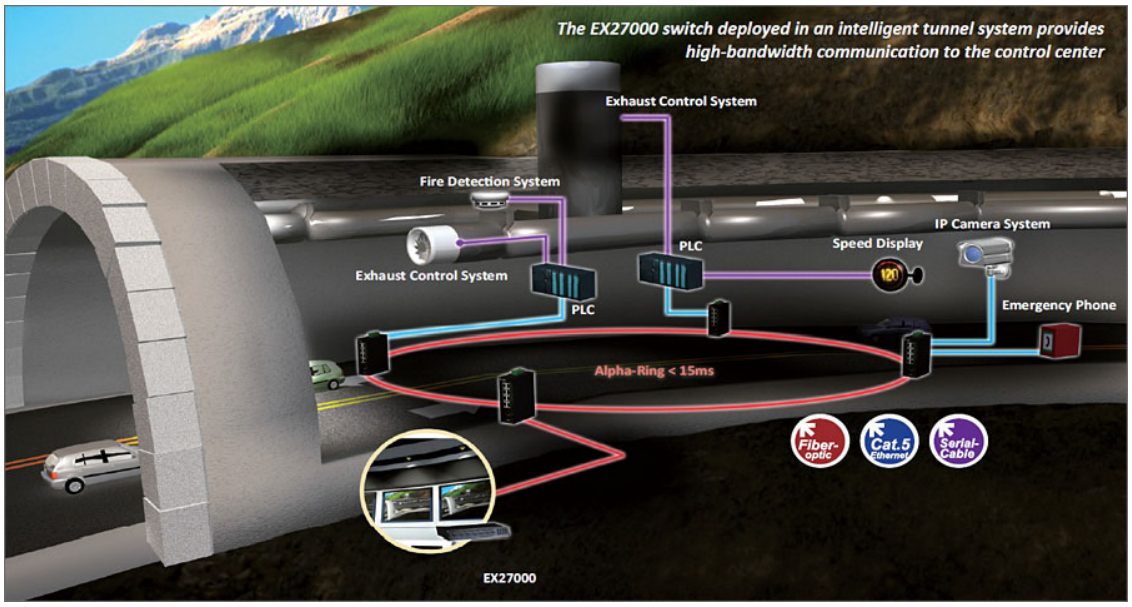
IEC 60068-2-27 Ea (Shock)

Industrial Compliance

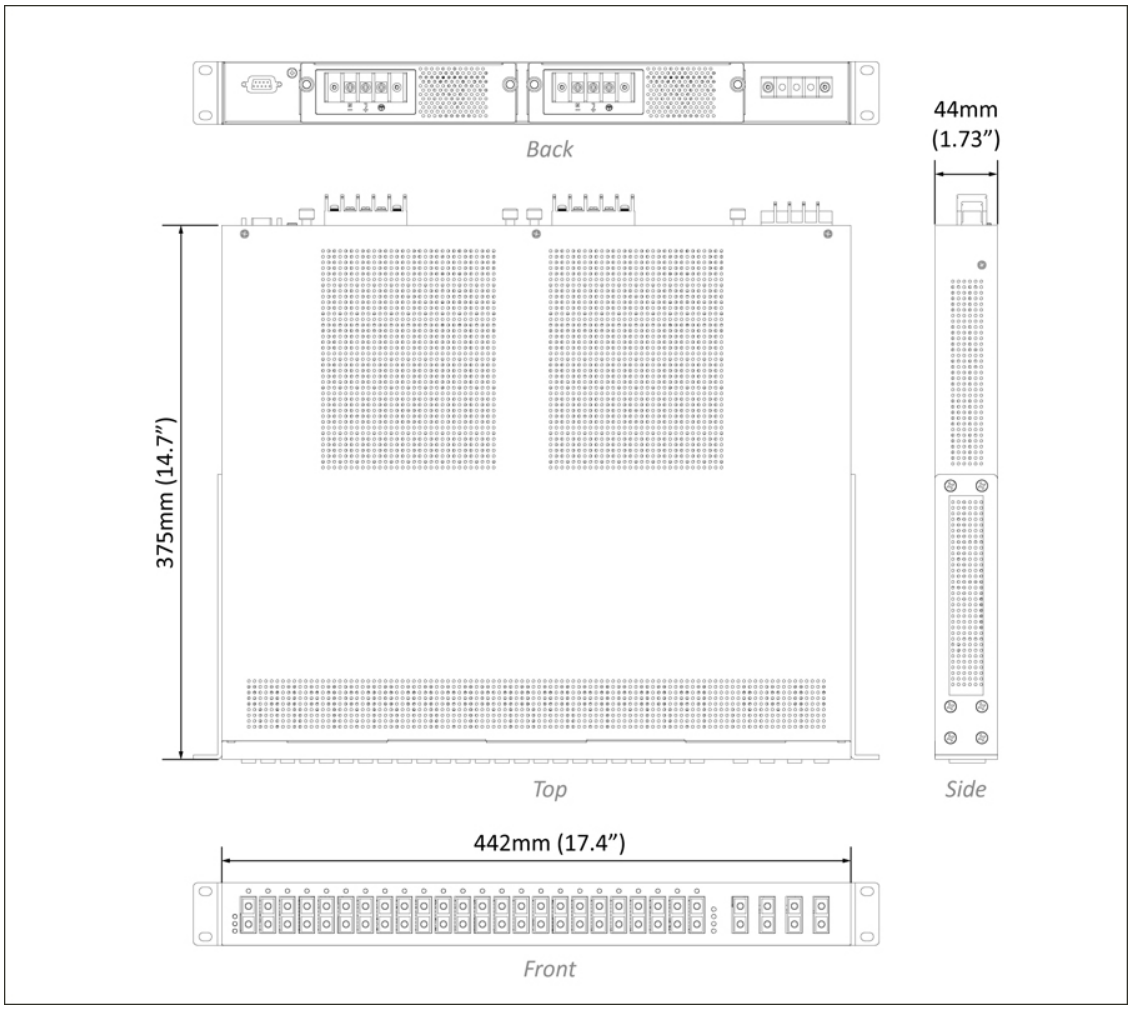
IEC 61850-3/IEEE 1613

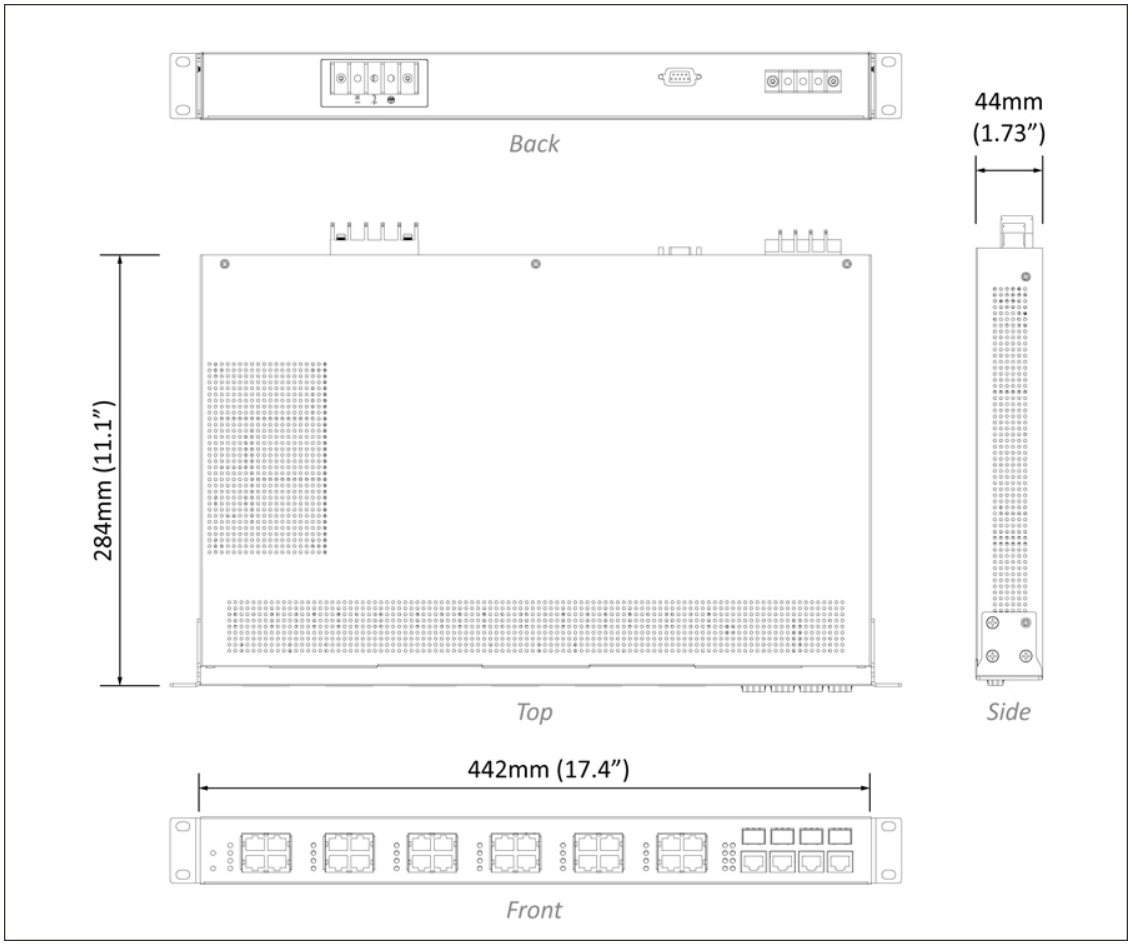
EN 50121-4

Application



Dimensions




Back
44mm
(1.73”)
284mm (11.1”)
Top
Side
442mm (17.4”)
Front

Ordering Info

Model

EX27604-0XYZ	24-port 10/100BASE-TX +4-port Gigabit Managed Ethernet Switch
EX27424-WXYZ	16-port 10/100BASE-TX +8-port 100BASE-FX +4-port Gigabit Managed Ethernet Switch
EX27244-WXYZ	8-port 10/100BASE-TX +16-port 100BASE-FX +4-port Gigabit Managed Ethernet Switch
EX27064-WXYZ	24-port 100BASE-FX +4-port Gigabit Managed Ethernet Switch
EX27064-V0VZ	24-port 100BASE-SFP +4-port Gigabit SFP Combo Managed Ethernet Switch

* Rack mounting kit included.

100FX Fiber Options (W)

1	Multi Mode (SC) - 2Km
2	Multi Mode (ST) - 2Km
6	Multi Mode (SC) WDM-TX: 1310nm/RX: 1550nm-2Km
7	Multi Mode (SC) WDM-TX: 1550nm/RX: 1310nm-2Km
8	Multi Mode (SC) WDM-TX: 1310nm/RX: 1550nm-5Km
9	Multi Mode (SC) WDM-TX: 1550nm/RX: 1310nm-5Km
A	Single Mode (SC) - 20Km
P	Single Mode (SC) WDM-TX: 1310nm/RX: 1550nm-20Km
Q	Single Mode (SC) WDM-TX: 1550nm/RX: 1310nm-20Km
V	SFP

Number of Fixed Gigabit Fibers (X)

0	None
4	Four Gigabit Fiber Ports

Gigabit Port Options (Y)

3	1000BASE-SX (SC) - 550m

4	1000BASE-SX (SC) - 2Km
A	1000BASE-LX (SC) - 10Km
B	1000BASE-LX (SC) - 20Km
R	1000BASE-BX (SC) WDM-TX: 1310nm/RX: 1550nm-20Km
S	1000BASE-BX (SC) WDM-TX: 1550nm/RX: 1310nm-20Km
V	4-port 100/1000BASE SFP Combo with 10/100/1000BASE-TX

* More Gigabit options also available upon request.

Power Input Interface (Z)

T	±48VDC (Terminal Block)
W	88-300VDC or 100-240VAC (Terminal Block)
C	100-240VAC (AC Inlet)
TR	±48VDC Redundant (Terminal Block)
WR	88-300VDC or 100-240VAC Redundant (Terminal Block)
CR	100-240VAC Redundant (AC Inlet)